

1-9. (CANCELED)

10. (CURRENTLY AMENDED) A method for interlinking one or more of regulation and control functions of two or more systems in a motor vehicle, the method comprising the steps of:

defining wherein the one or more of the regulation or control functions and a communications structure of the one or more of the regulation or control functions of the two or more systems are defined by as graphs containing nodes and directed gridlines, such that the nodes of the graphs represent the one or more of the regulation or control functions and directed gridlines represent defined communication paths of the one or more of the regulation or control functions, and;

communicating the one or more of the regulation or control functions and a communications structure of the one or more of the regulation or control functions of the two or more systems between the two or more systems by an electronic control.

11. (PREVIOUSLY PRESENTED) The method according to claim 10, wherein the directed gridlines of the graphs are ordered pairs (X, Y) of the one or more of the regulation or control, which are represented as arrows between the nodes.

12. (PREVIOUSLY PRESENTED) The method according to claim 10, wherein the nodes represent the one or more of the regulation or control functions G_i , R_i and S_i such that G_i is at least one function defined for each system parameter g_i to be controlled, which defines nominal values $s_{\text{oll}}y_i$ for g_i , R_i is at least a second function defined for each system parameter g_i to be controlled, which controls or regulates g_i by means of nominal value specifications for other functions X_1 , X_2 , X_3 , ... and S_i is a third function defined for each control intervention point s_i , which organizes interventions of function X_1 , X_2 , X_3 , ... on the control intervention point s_i , only one node being provided for one function.

13. (PREVIOUSLY PRESENTED) The method according to claim 10, wherein for two nodes (X, Y) just one directed gridline (X, Y) is entered in the graph when the function X transmits a nominal operation mode to the function Y, such that when (X, Y) is a directed gridline in the graph, the function Y transmits just one actual operation condition ${}^{1\text{st}}b_Y$ to the function X.

14. (PREVIOUSLY PRESENTED) The method according to claim 13, wherein the function X additionally transmits to the function Y one or more nominal values α, β, x, \dots for system or the control parameters a, b, c, ... and the function Y transmits to the function X one or more nominal values λ, μ, v, \dots for system or control parameters l, m, n, ...

15. (PREVIOUSLY PRESENTED) The method according to claim 11, wherein via a directed gridline (X, Y) the function Y transmits to the function X optional limits $\alpha_{\min}, \alpha_{\max}, \beta_{\min}, \beta_{\max}, x_{\min}, x_{\max}, \dots$ within which nominal value specifications of the function X for system or control parameters a, b, c, ... can be realized by the function Y.

16. (PREVIOUSLY PRESENTED) The method according to claim 11, wherein when several functions X_1, X_2, X_3, \dots transmit to the function Y nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$ for a parameter w, access conflicts are prevented in that, depending on the actual operation mode $istb_Y$ of the function Y, the function Y decides which of the nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$ will be used or how the nominal value for the parameter w will be calculated from $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$, such that the calculation of the actual operation mode by means of nominal operation modes or actual operation mode is carried out in such manner that a clear selection or calculation of the nominal value for w emerges from the quantity of nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$

17. (PREVIOUSLY PRESENTED) The method according to claim 10, wherein the gridlines of the graphs are chosen such that no directed cycle is produced.

18. (PREVIOUSLY PRESENTED) The method according to claim 12, wherein the establishment of the directed gridlines comprises the following steps:

a first table is prepared, in whose first column the functions G_i and in whose first row the functions R_i are entered, so that cells (G_i, R_i) are produced, and when G_i defines a nominal value for g_i , this cell (G_i, R_i) of the table is marked;

a second table is prepared, in whose first row the functions S_i and in whose first column the functions R_i are entered, and when the control parameter s_i influences the system parameter g_i and the function R_i uses the function S_i to control g_i , the cell (R_i, S_i) is marked, such that the marked cells of the two tables indicate the directed gridlines of the associated graph.

19. (NEW) A method for mapping a hierarchical control structure defining the communication and application of regulation and control functions in an electronic control of a motor vehicle according to an array comprising a plurality of predefined nodes and directed gridlines between the nodes, the method comprising the steps of:

defining each of the plurality of nodes according to the regulation and control function of a specified motor vehicle operating system;

connecting the directed gridlines as a communications path between specified nodes for transmitting at least one nominal value between the regulation and control functions specified by the connected nodes;

transmitting at least one nominal operation value from a first node to a connected second node and transmitting one actual operation condition from the second node to the first node; and

evaluating the actual operation condition according to the regulation and control function of the first node to determine if the second node is properly implementing the at least one nominal value within an appropriate target specification for the specified motor vehicle operating system.

20. (NEW) The method according to claim 19, further comprising the step of linking the nodes according to the directed gridlines between the nodes for transmitting ordered pairs (X, Y) between the regulation and control functions along the communications paths.

21. (NEW) The method according to claim 19, further comprising the steps of defining the nodes to represent the regulation and control functions according to variables: G_i , R_i and S_i , wherein G_i is at least one function defined for each system parameter g_i to be controlled, which defines nominal values $y_{i,s}$ for g_i , R_i is at least a second function defined for each system parameter g_i to be controlled, which controls or regulates g_i by means of nominal value specifications for other functions X_1 , X_2 , X_3 , ... and S_i is a third function defined for each control intervention point s_i , which organizes interventions of function X_1 , X_2 , X_3 , ... on the control intervention point s_i , only one node being provided for one function.

22. (NEW) The method according to claim 19, further comprising the step of entering between two nodes (X, Y) just one directed gridline (X, Y) in the array when the

function X transmits a nominal operation mode to the function Y, such that when (X, Y) is a directed gridline in the array, the function Y transmits just one actual operation condition ${}^{ist}b_Y$ to the function X.

23. (NEW) The method according to claim 22, further comprising the step of additionally transmitting from the function X to the function Y one or more nominal values α, β, x, \dots for system or the control parameters a, b, c, \dots and the function Y transmits to the function X one or more nominal values λ, μ, ν, \dots for system or control parameters l, m, n, \dots

24. (NEW) The method according to claim 19, further comprising the step of transmitting via a directed gridline (X, Y) the function Y to the function X optional limits $\alpha_{min}, \alpha_{max}, \beta_{min}, \beta_{max}, x_{min}, x_{max}, \dots$ within which nominal value specifications of the function X for system or control parameters a, b, c, \dots can be realized by the function Y.

25. (NEW) The method according to claim 19, further comprising the step of transmitting several functions X_1, X_2, X_3, \dots to the function Y nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$ for a parameter w, access conflicts are prevented in that, depending on the actual operation mode ${}^{ist}b_Y$ of the function Y, the function Y decides which of the nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$ will be used or how the nominal value for the parameter w will be calculated from $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$, such that the calculation of the actual operation mode by means of nominal operation modes or actual operation mode is carried out in such manner that a clear selection or calculation of the nominal value for w emerges from the quantity of nominal values $sollw_{X_1}, sollw_{X_2}, sollw_{X_3}, \dots$

26. (NEW) The method according to claim 19, further comprising the step of choosing the gridlines of the graphs such that no directed cycle is produced.

27. (NEW) The method according to claim 21, further comprising the establishment of the directed gridlines according to the following steps:

preparing a first table in whose first column the functions G_i and in whose first row the functions R_i are entered, so that cells (G_i, R_i) are produced, and when G_i defines a nominal value for g_i , this cell (G_i, R_i) of the table is marked;

preparing a second table in whose first row the functions S_i and in whose first column the functions R_i are entered, and when the control parameter s_i influences

the system parameter g_j and the function R_i uses the function S_i to control g_j , the cell (R_i, S_i) is marked, such that the marked cells of the two tables indicate the directed gridlines of the associated graph.

[028] Fig. 7 is a schematic diagram illustrating the interlinking relationship between the communicating components according to the invention.

[029] According to the invention, the distribution of the control and/or regulation functions of two or more systems 1, 2 of a motor vehicle and the communications structure of the control and/or regulation functions [[is]] are defined by means of graphs containing nodes and directed gridlines; in this, the nodes of the graphs represent control and/or regulation functions and their directed gridlines represent transmission paths of the control and/or regulation functions. An electronic control 3 communicates the graphs and directed gridlines of the two or more systems 1, 2 between the two or more systems 1,2 to limit the negative reciprocal influence on one another. The systems 1,2 can be one or more of, for example, electronic engine controls, electronic transmission controls, ASR (drive slip regulation), ABS (anti-blocking system) functions, shift strategy controls, the level adjustment, body-vehicle acceleration, roll angle, pitch angle, vehicle-level, and individual wheel slip.